



# Examining Torah Authorship Through NLP

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# Torah Authorship

The Torah is composed of material from multiple different authors or sources:

- Priestly
- Deuteronomist
- Yahwist



# Process

## Data Source



## Text Processing

Regex & Snowball Stemmer

TF-IDF Vectorizer

LDA

## Classification

Random Forest



# Scraping + Stemming

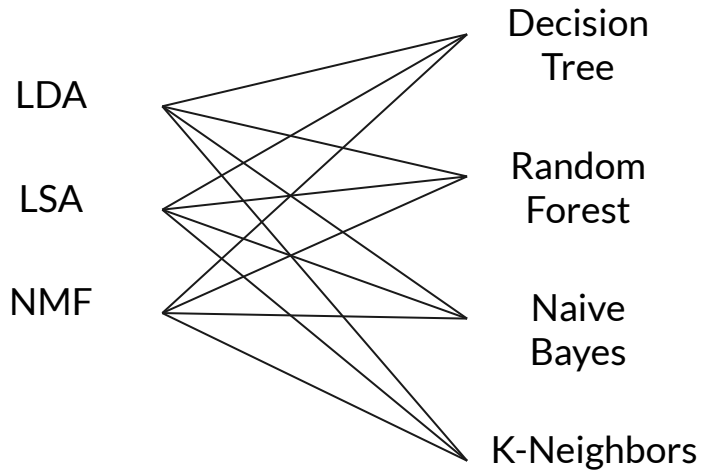
I scraped the Torah from the Jewish Virtual Library.

All punctuation was removed.

I applied the Snowball stemmer.



# PCA And Classification





spake, **say**, **moses**, lord, aaron, command, peopl, word, **sinai**, befor

thi, thee, **shalt**, god, lord, thine, **make**, hath, **command**, befor

shall, upon, man, **unclean**, put, **priest**, ani, everi, thing, thereof

israel, children, command, moses, congreg, tabernacle, aaron, accord, among, levit

offer, **burnt**, sin, sacrifice, lord, altar, **lamb**, meat, peac, fire

said, **go**, lord, let, people, **pharaoh**, us, god, mose, behold

son, aaron, family, bare, name, daughter, jacob, tribe, call, conceiv

**number**, hundr, **year**, thousand, two, old, **family**, seven, twenty, accord

ye, day, shall, **command**, **keep**, eat, therefor, lord, statut, god

land, egypt, came, pass, went, **joseph**, brought, **pharaoh**, **canaan**, forth



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Moses Speaking at Sinai

Commandments

Cleanliness, Purity

Israel, Tribes

Sacrifices

Prince of Egypt

Lineages

Time

Commandments

Egypt, Joseph



Moses Speaking

Commandments

Cleanliness

Israel

Sacrifices

Prince of Egypt

Lineages

Time

Commandments

Egypt



Moses Speaking

Commandments

Cleanliness

Israel

Sacrifices

Prince of Egypt

Lineages

Time

Commandments

Egypt

# Example Prediction

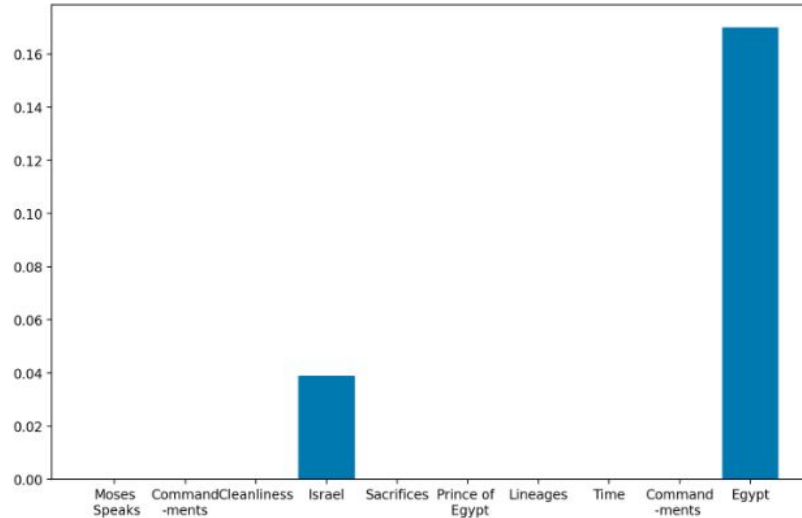
Enter a verse

Now there arose up a new king over Egypt, which knew not Joseph. And he said unto his people,

Prediction: Yahwist

Now there **arose** up a **new king** over **Egypt**, which **knew** not **Joseph**. And he **said** unto his **people**, **Behold**, the **people** of the **children** of **Israel** are more and **mightier** than we: **Come** on, **let us deal wisely** with them; **lest** they **multiply**, and it **come** to **pass**, that, when there **falleth** out **any war**, they **join also** unto our **enemies**, and **fight** against us, and so **get** them up out of the **land**.

Select a word to view



# Are These Authors?



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## Next Steps

Tag instances of God through the Torah, and cluster them with Word2Vec to identify related portrayals in different verses.